REMARKS/ARGUMENTS

1.Rejection of claim 1 under 35 U.S.C. 102(b) as being anticipated by Stolfa et al.:

Claim 1 is amended to overcome this rejection. The amendment is made to emphasize that the present method is to form a PN junction varactor rather than a MOS varactor, so as to distinguish the present method from the Stolfa et al. No new matter is entered.

Refering to page 2 of the Official Action, Examiner alleges that Stolfa et al. discloses providing a substrate 12, the substrate comprising an ion well of a first conductivity type 15 and a plurality of isolation structures 18 positioned on the ion well; implanting ions of the first conductivity type into the ion well to form a doping region (first electrode) (col. 2, lines 38-50); forming a doping layer (second electrode) of a second conductivity type 22, 24, 26, 28 to cover portions of the doping region(col.3 , line 35-50).

However, according to Stolfa et al., wells 22,24,26,28 are of the same conductive type as the buried layer 15 (bridging paragraph between col.2, and col.3). Therefore, since the conductivity type of wells 22,24,26,28 and that of the ion well 15 are the same, the step of forming wells 22,24,26,28 of Stolfa et al. is different from the step of forming a second electrode (doping layer) of a second conductivity of the present method. Furthermore, examiner pointed that Stolfa et al. discloses implanting ions of the first conductivity type into the ion well to form a doping region within the active area in col. 2, lines 38-50. However in the above-mentioned

paragraph, the doping regions are formed under the isolation structure 18, rather than adjacent to the isolation structures 18.

However, according to Stolfa et al., first electrodes and second electrodes of the varactor are wells 22,24,26,28(col.2, line 58-59) and gate structures 62,64,66,68 (col.4 , line 16-17) correspondingly. In other words, Stolfa et al.discloses a MOS varactor and method for making the same. On the contrary, claim 1 of the present application discloses a method for forming a PN junction varactor.

In other words, the varactor structure according to Stolfa et al. is different from those made by the present method.

Reconsideration of claim 1 is politely requested.

2.Rejection of claims 2-9 under 35 U.S.C. 102(b) as being anticipated by Stolfa et al.:

Claims 2-9 are dependent on claim 1 and should be allowed if claim 1 is allowed. Reconsideration of claims 2-9 is therefore politely requested.

3.Rejection of claims 10 under 35 U.S.C. 102(b) as being anticipated by Stolfa et al.:

Refering to pages 3-4 of the Official Action, Examiner considers that Stolfa et al. discloses implanting ions of a **first conductivity type** into the substrate 12 to form at least a first ion well 15 in the first region and at least a second ion well 18 in the second region, implanting ions of a **second conductivity type** into the substrate to form at least a third ion well 22, 24, 26, 28 (col.2-col.3, line 6).

Actually, according to Stolfa et al., wells 22,24,26,28 are of the same conductivity type, which is referred to the first conductivity type, as the buried layer 15. On the contrary, in the present application, ions of a **second conductivity type** are implanted to form a third ion well 44. Therefore, the present application is significantly different from Stolfa et al..

Furthermore, according to Stolfa et al., buried layer 15 is formed by implanting ions in the substrate 12, but isolation structures 18 and wells 22,24,26,28 are formed by implanting ions **in the epitaxial layer 16, which is not buried in the substrate 12.** (col. 2, line 15- col. 3, line 6)On the contrary, according to the present method, three ion wells are all formed by implanting ions **in the substrate.**

In addition, in Stolfa et al., a plurality of varactor structures are on a single ion well (buried layer) 15. The heavily doped regions under the field oxide regions 18 serve as isolation structures. On the contrary, according to the present method of claim 10, each MOS transistor and varactor are formed on separate ion wells 44, 46, 48, which means the MOS structures and the PN junction structure are formed on every ion well 44, 46, 48 correspondingly. In addition, there are another isolation structures 50 formed outside the ion wells. Therefore, the present application is significantly different from Stolfa et al..

Accordingly, the method disclosed in claim 10 of the present application is significantly different from those disclosed in Stolfa et al..

Reconsideration of claim 10 is politely requested.

4.Rejection of claims 11-16 under 35 U.S.C. 102(b) as being anticipated by Stolfa et al.:

Claims 11-16 are dependent on claim 10 and should be allowed if claim 10 is allowed. Reconsideration of claims 11-16 is therefore politely requested.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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Note: Please leave a message in my voice mail if you need to talk to me. The time in D.C. is 12 hours behind the Taiwan time, i.e. 9 AM in D.C. = 9 PM in Taiwan).